

Amendments to the Claims

1. (Currently Amended) Apparatus including a phase-lock loop, the phase-lock loop comprising an oscillator (20) for generating a variable frequency signal and having a control input (22) for controlling the frequency of the variable frequency signal, dividing means (30) coupled to an output of the oscillator (20) for dividing the variable frequency signal, phase comparator means (40) coupled to an output of the dividing means (30) for generating a comparison signal indicative of a phase difference between the divided variable frequency signal and a reference signal, filtering means (50) coupled to an output of the phase comparator (40) means for filtering the comparison signal, coupling means (25) for coupling an output of the filtering means (50) to the control input (22) of the oscillator (20), further comprising modulation means (210 or 400, 410) for causing the comparison signal to be modulated at a plurality of rates, measurement means (220) for measuring for each of the plurality of rates an indication of the peak-to-peak variation of a control signal applied to the control input (22) of the oscillator (20), and adjustment means (230) operable to adjust a loop gain between the comparator means and the filter means in response to the measurements to obtain a predetermined loop frequency response.

2. (Original) Apparatus as claimed in claim 1, wherein the dividing means (30) has a variable division ratio and the modulation means (210 or 400, 410) for causing the comparison signal to be modulated at a plurality of rates comprises means (210 or 410) for modulating the variable division ratio at a plurality of rates.

3. (Original) Apparatus as claimed in claim 1, wherein the modulation means (210) for causing the comparison signal to be modulated at a plurality of rates comprises means (210) for modulating the frequency of the reference signal.

4. (Original) Apparatus as claimed in claim 1, wherein the modulation means (410, 400) for causing the comparison signal to be modulated at a plurality of rates comprises means (410, 400) for modulating the filtered comparison signal.

5. (Currently Amended) Apparatus as claimed in claim 1 ~~any one of claims 1 to 4~~, wherein the phase comparator (40) comprises means (40) for generating pulses of current and the adjustment means (230) comprises means (230) for adjusting the amplitude or duration of the pulses of current.

6. (Currently Amended) Apparatus as claimed in claim 1 ~~any one of claims 1 to 4~~, wherein the PLL further comprises a variable gain stage (20) and the adjustment means is operable to adjust the loop gain by varying the gain of the variable gain stage (20).

7. (Currently Amended) A method of calibrating a phase-lock loop including a variable frequency oscillator (20) having a control input (22) for controlling the frequency of the oscillator, a divider (30) for dividing a signal generated by the variable frequency oscillator, a phase comparator (40) for generating a comparison signal indicative of the phase difference between the divided signal and a reference signal, filtering means (50) for filtering the comparison signal, and coupling means (25) for coupling an output of the filtering means (50) to the control input (22) of the variable frequency oscillator (20), the method comprising modulating the comparison signal at a plurality of rates, measuring for each of the plurality of rates an indication of the peak-to-peak variation of a control signal applied to the control input of the variable frequency oscillator, and, in response to the measurements, adjusting a loop gain between the phase comparator and the filtering means to obtain a predetermined loop frequency response.

8. (Original) A method as claimed in claim 7, wherein the divider (30) has a variable division ratio and modulating the comparison signal comprises modulating the variable division ratio.

9. (Original) A method as claimed in claim 7, wherein modulating the comparison signal comprises modulating the frequency of the reference signal.

10. (Original) A method as claimed in claim 7, wherein modulating the comparison signal comprises modulating the filtered comparison signal.

11. (Currently Amended) A method as claimed in claim 7 ~~any one of claims 7 to 10~~, wherein the phase comparator (40) comprises means for generating pulses of current and adjusting the loop gain comprises varying the amplitude or duration of the pulses.

12. (Currently Amended) A method as claimed in claim 7 ~~any one of claims 7 to 10~~, wherein the PLL further comprises a variable gain stage (20) and adjusting the loop gain comprises varying the gain of the variable gain stage.